



Office of Science Science Education

Helping to Prepare Tomorrow's Scientific Enterprise

<http://www.scied.science.doe.gov>

The Office of Science conducts educational and training activities to ensure a pipeline of scientific, engineering, and technical personnel, and manages an extensive and advanced complex of scientific facilities that is fertile ground for the training of the Nation's future scientific and technical work force.



The Opportunity: This Nation is blessed with a rich culture of scientific inquiry, scientists who are at the forefront of innovation and discovery, some of the best schools and universities in the world, and a growing technology sector to employ young scientists and engineers. At our unique scientific facilities, and in conjunction with university and industry partners, the Office of Science has an opportunity to help create and educate a U.S. science and technology workforce of the future without equal in the world.

The Challenge: To continue our global leadership in science and technology, the United States must cultivate and nurture a new generation of scientists and engineers who will ensure our technology future. But our schools and universities are struggling to produce a workforce sufficiently skilled to do the work our Nation will require, a workforce that at the same time is as diverse as America itself. A cornerstone of American competitiveness is, and must continue to be, an excellent science and technology education that gives all students an equal opportunity to excel in the workforce of the future.

FY 2002 Investment Plan: In FY 2002 The Office of Science will continue to support undergraduate research internships at its laboratories for undergraduate students from four-year institutions, community college students and pre-service teachers preparing to teach math, science or technology at the K-12 level.

- Students apply on-line to these programs and are selected on a competitive basis.
- Students are matched with mentors working in the students' fields of interest.
- Students spend an intensive 10-16 weeks working under the individual mentorship of resident scientists and must each produce an abstract and formal research report.
- Students attend seminars that broaden their view of career options and help them understand how to become members of the scientific community.
- Pre-service teachers are also mentored by master teachers, who help them develop education modules to transfer the research experience back to the classroom.

Program goals and outcomes are measured based on students' research papers, abstracts, surveys and outside evaluation. An undergraduate student journal was recently created which publishes selected full research papers and all abstracts of student research in the program. A system is being created to track students in their academic career paths.

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To attract a wider cross section of students, the Department of Energy has entered into a collaboration with the National Science Foundation (NSF). Students participating in NSF undergraduate programs will be encouraged to apply for Office of Science undergraduate research internship opportunities. The partnership with NSF will be expanded in FY 2002.



To encourage high school students involvement in the sciences, the Office of Science manages the **National Science Bowl** for high school students. Over 11,000 students from across the country, ranging from the U.S. Virgin Islands and Puerto Rico to Hawaii and the Tribal Nations, compete in over 50 regional competitions in this fast-paced, question-and-answer tournament that test their knowledge in math, science and technology. About 300 students and teachers, representing the winners of the regional competitions, come to Washington, D.C. the first weekend in May for the national competition.

The Office of Science also manages the legislated **Albert Einstein Distinguished Educator Fellowships Program**. Selected teachers spend up to one year in a Congressional Office, the Department of Energy, the National Science Foundation, the National Aeronautics and Space Administration, the National Institutes of Health, the Department of Education, the Environmental Protection Agency, the National Institute of Science and Technology or the White House Office of Science and Technology Policy. Einstein Fellows bring to Congress and appropriate branches of the Federal government the extensive knowledge and experience of classroom teachers.



Benefits: Through the Office of Science, students can get information on the latest scientific research being conducted in our national laboratories, be part of scientific teams that are actively doing hands-on research, and receive guidance from some of the best scientists in the world. These students will be trained in problem-solving environments, have access to advanced scientific instruments and have gained experience in the process of scientific data collection, analysis and management.